United Nations

Framework Convention on Climate Change

FCCC/IDR.7/FRA

Distr.: General
15 August 2018

English only

Report on the technical review of the seventh national communication of France

Parties included in Annex I to the Convention were requested by decision 9/CP.16 to submit their seventh national communication to the secretariat by 1 January 2018. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the seventh national communication and relevant supplementary information under the Kyoto Protocol of France, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" and the "Guidelines for review under Article 8 of the Kyoto Protocol".

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Abbreviations and acronyms

AEA	annual emission allocation
AFD	the French Development Agency (Agence Française de Développement)
AMMA	African Monsoon Multidisciplinary Analyses
BR	biennial report
CH_4	methane
CIRAD	Centre for International Cooperation in Agricultural Research for Development
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gases	fluorinated gases
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
IRD	Research Institute for Development
LULUCF	land use, land-use change and forestry
NA	not applicable
NAPCC	national adaptation plan on climate change
NC	national communication
NE	not estimated
NF_3	nitrogen trifluoride
NGOs	non-governmental organizations
NIR	national inventory report
NO	not occurring
non-ETS sectors	sectors not covered by the EU ETS
NSR	National Strategy for Research
N_2O	nitrous oxide
ONERC	the French National Observatory on the Effects of Global Warming (Observatoire National sur les Changements Climatiques)
PaMs	policies and measures
PFC	perfluorocarbon
PIA	the Investments for the Future Programme (Programme des Investissements d'Avenir)
reporting guidelines for supplementary information	"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol. Part II: Reporting of supplementary information under Article 7, paragraph 2"
SF_6	sulfur hexafluoride

SRADDET	the Regional Planning, Sustainable Development, and Inter-Regional Equality Scheme (Schéma Régional D'aménagement, de Développement Durable et d'Egalité des Territoires)
UNFCCC reporting guidelines on NCs	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications"
WAM	'with additional measures'
WEM	'with measures'
WOM	'without measures'

I. Introduction and summary

A. Introduction

1. This is a report on the in-country technical review of the NC7 of France. The review was coordinated by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention" (annex to decision 13/CP.20), and the "Guidelines for review under Article 8 of the Kyoto Protocol" (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).[1]

2. In accordance with the same decisions, a draft version of this report was transmitted to the Government of France, which provided no comments.

3. The review was conducted from 9 to 14 April 2018 in Paris by the following team of nominated experts from the UNFCCC roster of experts: Mr. Abdelrhani Boucham, (Morocco), Ms. Savitri Garivait (Thailand), Mr. Ture Hammar (Denmark), Mr. Mauro Meirelles de Oliveira Santos (Brazil) and Mr. Lorenz Moosmann (Austria). Mr. Hammar and Mr. Meirelles de Oliveira Santos were the lead reviewers. The review was coordinated by Ms. Veronica Colerio (UNFCCC secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the NC7 of France in accordance with the UNFCCC reporting guidelines on NCs (decision 4/CP.5) and the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol (annex to decision 15/CMP.1 and annex III to decision 3/CMP.11).

1. Timeliness

5. The NC7 was submitted on 29 December 2017, before the deadline of 1 January 2018 mandated by decision 9/CP.16. France also submitted a corrigendum and an English version of the NC7 on 22 February 2018.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by France in its NC7, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs.

[1] At the time of the publication of this report, France had submitted its instrument of acceptance of the Doha Amendment; however, the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

Table 1

Assessment of completeness and transparency of mandatory information reported by France in its seventh national communication, including supplementary information under the Kyoto Protocol

Section of NC	*Completeness*	*Transparency*	*Reference to description of recommendations*	*Supplementary information under the Kyoto Protocol*	*Completeness*	*Transparency*	*Reference to description of recommendations*
Executive summary	Complete	Transparent		National system	Complete	Transparent	
National circumstances	Complete	Transparent		National registry	Complete	Transparent	
GHG inventory	Mostly complete	Transparent	Issue 1 in table 6	Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
PaMs	Complete	Mostly transparent	Issue 3 in table 9	PaMs in accordance with Article 2	Complete	Transparent	
Projections and the total effect of PaMs	Complete	Transparent		Domestic and regional programmes and/or arrangements and procedures	Mostly complete	Transparent	Issue 1 and 2 in table 7
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent		Information under Article 10[a]	Complete	Transparent	
Financial resources and transfer of technology	Mostly complete	Mostly transparent	Issue 1 in table 16 Issues 1, 2 and 3 in table 17	Financial resources	Mostly complete	Transparent	Issue 1 in table 16
Research and systematic observation	Complete	Mostly transparent	Issue 1 in table 19	Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	
Education, training and public awareness	Complete	Transparent					

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III below.

[a] The assessment refers to information provided by the Party on the provisions contained in Article 4, paragraphs 3, 5 and 7, of the Convention reported under Article 10 of the Kyoto Protocol, which is relevant to Annex II Parties only. Assessment of the information provided by the Party on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

3. Summary of reviewed supplementary information under the Kyoto Protocol

7. The supplementary information under Article 7, paragraph 2, of the Kyoto Protocol is incorporated in different sections of the NC7, and the supplementary information under Article 7, paragraph 1, of the Kyoto Protocol is reported in the NIR of the 2017 annual submission. Table 2 provides references to where the information is reported. The technical assessment of the information reported under Article 7, paragraphs 1 and 2, of the Kyoto Protocol is contained in the relevant sections of this report.

Table 2
Overview of supplementary information under the Kyoto Protocol reported by France

Supplementary information	*Reference to the section of NC7*
National registry	Chapter III, section D
National system	Chapter III, section C
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Chapter V, section C
PaMs in accordance with Article 2	Chapter IV, section D
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Chapter IV, section E
Information under Article 10	Chapter III, section D; chapter IV, section B; chapter VI, section C; chapter VII, section C; chapter VIII; chapter IX
Financial resources	Chapter VII
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Chapter IV, section D

II. Technical review of the information reported in the seventh national communication, including the supplementary information under the Kyoto Protocol

A. Information on national circumstances and greenhouse gas emissions and removals

1. National circumstances relevant to greenhouse gas emissions and removals

(a) Technical assessment of the reported information

8. The national circumstances of France explain the relationship between its historic and future emission trends and the climate change policy agenda. The changing nature of those circumstances defines the factors that affect the climate policy development and implementation of the Convention. The NC7 contains key data on legislation, population trends, geography and land use, climate and climate change, economic developments, energy, transport, the buildings sector, industry, trade, the services sector, agriculture, forestry, resource efficiency and wastewater.

9. In the NC7, France has provided a detailed description of the national circumstances and changes since its NC6. In France, the number of households is increasing faster than the population, given the decreasing trend in the average number of persons per household. This household growth has a direct influence on the need for housing and on energy consumption for housing and transport.

10. The ERT noted that during the period 1990–2015 France's population and GDP increased by 13.9 and 45.6 per cent, respectively, while GHG emissions per GDP unit and GHG emissions per capita decreased by 42.1 and 26.0 per cent, respectively. The decreases in GHG emissions per GDP unit and GHG emissions per capita have nearly doubled compare with those indicated in the NC6, despite the increase in the number of households and the

economic revival since the 2008 crisis. This indicates that France has made significant progress in decoupling GHG emissions from economic growth. The decoupling was due to measures taken under the Energy Transition for Green Growth Act and its National Low Carbon Strategy. Table 3 illustrates the national circumstances of France by providing some indicators relevant to emissions and removals.

Table 3
Indicators relevant to greenhouse gas emissions and removals for France for the period 1990–2015

						Change (%)	
Indicator	*1990*	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*
GDP per capita (thousands 2011 USD using purchasing power parity)	29.53	34.90	36.87	37.53	37.77	27.9	0.6
GHG emissions without LULUCF per capita (t CO_2 eq)	9.40	9.12	7.95	6.94	6.96	–26.0	0.3
GHG emissions without LULUCF per GDP unit (kg CO_2 eq per 2011 USD using purchasing power parity)	0.32	0.26	0.22	0.18	0.18	–42.1	–0.3

Sources: (1) GHG emission data: France's 2017 GHG inventory submission, version 3; (2) population and GDP: World Bank.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

(b) Assessment of adherence to the reporting guidelines

11. The ERT assessed the information reported in the NC7 of France and identified an issue relating to transparency. The finding is described in table 4.

Table 4
Findings on national circumstances relevant to greenhouse gas emissions and removals from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 8 Issue type: transparency Assessment: encouragement	The ERT noted that in its NC7 France provided a detailed description of its national circumstances in line with the UNFCCC reporting guidelines on NCs. However, France did not follow the order of components recommended by the UNFCCC reporting guidelines on NCs. In addition, some of the components were regrouped. For example, all sectors were grouped under the "Economy" section of the NC7 and some sectors such as agriculture and forestry were grouped together. Consequently, it was difficult for the ERT to understand how the national circumstances are relevant to factors affecting GHG emissions and removals, including disaggregated indicators, to explain the relationship between national circumstances and emissions or removals. France provided additional information during the review matching the list of components reported in the NC7 and the headings recommended by the UNFCCC reporting guidelines on NCs. Further, France provide additional information in the form of an oral presentation on how the national circumstances are relevant to factors affecting GHG emissions and removals. The ERT encourages France to provide information on the national circumstances in a streamlined and systematic manner, as was presented during the review, including how the national circumstances are relevant to factors affecting GHG emissions and removals, including disaggregated indicators, to explain the relationship between national circumstances and emissions or removals; and following the order of headings included in the UNFCCC reporting guidelines on NCs.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

2. Information on greenhouse gas inventory arrangements, emissions, removals and trends

(a) Technical assessment of the reported information

12. Total GHG emissions[2] excluding emissions and removals from LULUCF decreased by 15.7 per cent between 1990 and 2015, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 18.3 per cent over the same period. Table 5 illustrates the emission trends by sector and by gas for France.

Table 5
Greenhouse gas emissions by sector and by gas for France for the period 1990–2015

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Sector									
1. Energy	382 526.48	395 884.02	371 058.82	316 608.14	322 395.44	–15.7	1.8	69.5	69.5
A1. Energy industries	66 679.75	62 714 77	60 760.29	40 653.66	42 716.38	–35.9	5.1	12.1	9.2
A2. Manufacturing industries and construction	83 039.17	80 634.21	64 333.57	55 156.41	54 047.27	–34.9	–2.0	15.1	11.7
A3. Transport	121 583.42	140 284.04	134 897.17	132 665.27	133 748.83	10.0	0.8	22.1	28.8
A4. and A5. Other	100 281.98	104 420.35	105 287.03	83 850.36	87 706.88	–12.5	4.6	18.2	18.9
B. Fugitive emissions from fuels	10 942.16	7 830.65	5 780.76	4 282.44	4 176.08	–61.8	–2.5	2.0	0.9
C. CO_2 transport and storage	NO, IE	NO, IE	NO, IE	NO, IE	NO, IE	–	–	–	–
2. IPPU	67 034.36	53 811.94	47 007.99	45 604.16	44 956.64	–32.9	–1.4	12.2	9.7
3. Agriculture	83 528.65	84 085.84	78 109.01	79 183.12	78 694.56	–5.8	–0.6	15.2	17.0
4. LULUCF	–26 479.12	–23 084.01	–39 345.49	–39 860.40	–35 809.76	35.2	–10.2	NA	NA
5. Waste	16 979.01	21 966.54	20 590.57	18 682.03	17 603.45	3.7	–5.8	3.1	3.8
6. Other	NO	NO	NO	NO	NO	–	–	–	–
Gas[a]									
CO_2	401 973.82	417 895.76	392 652.23	337 606.25	342 458.79	–14.8	1.4	73.1	73.9
CH_4	70 059.49	70 788.16	63 233.32	60 276.54	59 352.06	–15.3	–1.5	12.7	12.8
N_2O	66 192.27	55 037.24	41 932.38	41 647.05	41 442.13	–37.4	–0.5	12.0	8.9
HFCs	4 402.20	6 630.04	17 409.86	19 443.44	19 324.39	339.0	–0.6	0.8	4.2
PFCs	5 202.47	2 997.49	617.37	603.83	540.18	–89.6	–10.5	0.9	0.1
SF_6	2 221.77	2 379.77	889.10	489.72	521.91	–76.5	6.6	0.4	0.1
NF_3	16.48	19.89	32.13	10.63	10.63	–35.5	0.0	0.0	0.0
Total GHG emissions without LULUCF	**550 068.50**	**555 748.34**	**516 766.39**	**460 077.46**	**463 650.09**	**–15.7**	**0.8**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**523 589.38**	**532 664.33**	**477 420.89**	**420 217.06**	**427 840.33**	**–18.3**	**1.8**	**NA**	**NA**

Source: GHG emission data: France's 2017 annual submission, version 3.

[a] Emissions by gas without LULUCF and without indirect CO_2.

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2017 annual submission, version 3.

13. The decrease in total emissions was driven mainly by factors such as the improvement of industrial processes, the increasingly service-based nature of the French economy, and mitigation measures in the energy, agriculture and waste sectors.

14. Between 1990 and 2015, GHG emissions from the energy sector decreased by 15.7 per cent (60,131.04 kt CO_2 eq) owing mainly to improvements of energy and carbon efficiency in the manufacturing industries and to a reduction of GHG emissions from electricity production and urban heating. The trend in GHG emissions from fuel combustion showed a notable increase in transport (10.0 per cent or 12,165.41 kt CO_2 eq).

15. Between 1990 and 2015, GHG emissions from IPPU decreased by 32.9 per cent (22,077.72 kt CO_2 eq) owing mainly to the improvement of industrial processes and measures to reduce process emissions of N_2O. Between 1990 and 2015, GHG emissions from the agriculture sector decreased by 5.8 per cent (4,834.09 kt CO_2 eq), owing mainly to a reduction in the use of nitrogen-based fertilizers, a decline in cattle numbers and reduced energy consumption. The LULUCF sector was a net sink of 35,809.76 kt CO_2 eq in France in 2015; net GHG removals have increased by 9,330.64 kt CO_2 eq since 1990. The trend was mainly driven by the relatively low exploitation of forest resources, natural growth and the relatively young age of forests. Between 1990 and 2015, GHG emissions from the waste sector increased by 3.7 per cent (624.44 kt CO_2 eq) and, after peaking in 2002, GHG emissions have been decreasing owing mainly to measures such as CH_4 recovery from landfill sites.

16. Overall CO_2 emissions decreased between 1990 and 2015, mainly owing to emission reductions in the energy and manufacturing industries. CH_4 emissions decreased owing to measures in the waste sector. Likewise, N_2O emissions decreased owing to measures and changes of practice in the IPPU and agriculture sectors.

17. The summary information provided on GHG emissions was consistent with the information reported in the 2017 annual submission.

(b) Assessment of adherence to the reporting guidelines

18. The ERT assessed the information reported in the NC7 of France and identified issues relating to completeness and transparency. The findings are described in table 6.

Table 6
Findings on greenhouse gas inventory information from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 10 Issue type completeness Assessment recommendation	In the NC7 (chapter III and in appendix 2), France reports detailed information on GHG emission trends for the geographical scope of the Kyoto Protocol (i.e. without overseas territories). Information on GHG emission trends under the Convention is not provided in chapter III or in appendix 2 of the NC7. During the review, France explained that GHG emission trends for the geographical scope of the Kyoto Protocol are reported for reasons of consistency with the chapter on PaMs, but that detailed information under the Convention is available, for example in France's annual national inventory submission. The ERT recommends that France report GHG emission trends under the Convention in its next NC. If the Party decides to provide GHG emissions only for the geographical scope of the Kyoto Protocol, the ERT recommends that the Party provide, as a minimum, the total emissions under the Convention, the difference between the two totals in per cent, and a brief explanation on why the focus is put on emission trends for the geographical scope of the Kyoto Protocol, rather than the Convention.
2	Reporting requirement specified in paragraph 10	The ERT noted that the procedure reported in NC7 for gathering data, choosing emission factors and calculating emissions is different from that described in the 2017 NIR. The NC7 states that emission inventories are carried out in compliance

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
	Issue type: transparency Assessment encouragement	with recommendations from the UNFCCC (FCCC/SBSTA/2006/9 guidelines) and based on CORINAIR methodology. However, the 2017 NIR refers to the latest UNFCCC reporting guidelines (FCCC/CP/2013/10) and to the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. During the review France provided additional information clarifying the difference, and took note that systematically referencing the NIR would improve the transparency of the information in the NC7. The ERT encourages France to improve the transparency of the NC by aligning the information on the procedure for gathering data, choosing emission factors and calculating emissions to the information reported in the latest NIR.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

3. National system for the estimation of anthropogenic emissions by sources and removals by sinks

(a) Technical assessment of the reported information

19. France provided in the NC7 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The NC7 also contains a reference to the description of the national system provided in the report mandated by decision 2/CMP.8, submitted in the NIR of the 2017 annual submission. The ERT took note of the review of the changes to the national system reflected in the report on the individual review of the 2017 annual submission of France.

(b) Assessment of adherence to the reporting guidelines

20. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

4. National registry

(a) Technical assessment of the reported information

21. In the NC7 France provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1 and complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the changes to the national registry reflected in the report on the individual review of the 2017 annual submission of France.

(b) Assessment of adherence to the reporting guidelines

22. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

B. Information on policies and measures and institutional arrangements

1. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

(a) Technical assessment of the reported information

23. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, France committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level. France provided information on the domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol in chapter IV, section E, of the NC7.

24. Implementation of the Kyoto Protocol by France is underpinned by the National Low Carbon Strategy using 'carbon budgets' as the basis to set GHG emission reduction targets over four 5-year periods, with a long-term objective to reduce GHG emissions by 75 per cent by 2050. The overall responsibility for climate change policymaking lies with the Ministry for Ecological and Inclusive Transition, and a number of national institutions are involved in the implementation of the policy. France presented the National Low Carbon Strategy as the framework to meet the national commitments under the Kyoto Protocol. In addition, France has developed a system for regularly revising the National Low Carbon Strategy and monitoring its implementation in order to assess achievements and to prepare readjustments, as appropriate, which involves all the stakeholders including governmental agencies, civil society and NGOs.

25. Actions, at the regional and local levels, are also undertaken by the local authorities on the basis of local and regional planning instruments developed in accordance with the national priorities established in the National Low Carbon Strategy (e.g. SRADDET schemes and Territory Climate-Air-Energy Plans for inter-municipalities of more than 20,000 inhabitants). The ERT took note of the additional information, provided during the review, in the form of an organization chart on the institutional arrangements and coordination to support the development and implementation of the National Low Carbon Strategy. Also, France provided additional information on the roles and involvement of NGOs in the process of establishing the National Low Carbon Strategy.

26. France has legislative arrangements and administrative procedures in place to make information publicly accessible, such as the website of the Ministry of Transition Ecology and Solidarity, which give the public access to all information related to the National Low Carbon Strategy, including monitoring indicators, results of the National Low Carbon Strategy review, and plans and actions implemented at regional or municipality levels. The ERT took note of the proactive process among all stakeholders that France has established for the preparation, monitoring and review of the National Low Carbon Strategy, and of the Party's effort in making all the information related to this action publicly accessible, including the online public consultation.

27. France has national legislative arrangements and administrative procedures in place that seek to ensure that the implementation of activities under Article 3, paragraph 3, forest management under Article 3, paragraph 4, and any elected activities under Article 3, paragraph 4, of the Kyoto Protocol also contributes to the conservation of biodiversity and the sustainable use of natural resources. To strengthen the biodiversity conservation managed under the National Biodiversity Strategy (established in 2004 and revised in 2010 for the period 2011–2020), the Biodiversity, Nature, Landscape Recovery Act entered into force on 9 August 2016. This Act aims at strengthening and renewing public policies in relation to biodiversity, by establishing the principle of non-regression of environmental protection and, consequently, any future change in the legislation can only result in constant improvements in environmental protection. Under this Act France also established the French Agency for Biodiversity on 1 January 2017, which brings together pre-existing bodies: the National Office for Water and Aquatic Environment, the Technical Workshop for Natural Areas, the Marine Protected Areas Agency, and the French National Parks. The purpose of this grouping was to set up a one-stop service and management system with a clear budget allocation, aiming at strengthening knowledge, research and training in the field of biodiversity. The

ERT took note of this new effort by France in supporting Article 3, paragraphs 3 and 4, of the Kyoto Protocol.

(b) Assessment of adherence to the reporting guidelines

28. The ERT assessed the information reported in the NC7 of France and identified issues relating to completeness. The findings are described in table 7.

Table 7
Findings on domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 28	France provided in its NC7 the necessary supplementary information required under the reporting guidelines for supplementary information to demonstrate compliance with its commitments under the Kyoto Protocol. However, France did not report the time frames for the obligations established by the Kyoto Protocol, together with the relevant decisions of COP and CMP.
	Issue type: completeness	During the review, France only explained that France's time frames are the same as those of the other EU member States.
	Assessment: recommendation	The ERT recommends that France provide, in its next NC, the time frames for the obligations established by the Kyoto Protocol, together with the relevant decisions of COP and CMP.
2	Reporting requirement specified in paragraph 37	In its NC7, France provided a detailed description of domestic and regional legislative arrangements; however, it did not report on the enforcement and administrative procedures France has in place to meet its commitments under the Kyoto Protocol, including the legal authority for such programmes, how they are implemented and the procedures for addressing cases of non-compliance under domestic law.
	Issue type: completeness	
	Assessment: recommendation	During the review, France explained that regulations about the environment are used to implement most of the procedures for addressing cases of non-compliance under domestic law as well as rules on enforcement in the framework of supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. In particular, France provided examples of domestic laws for addressing non-compliance under the EU ETS and non-compliance in the transport and building sectors.
		The ERT recommends that France report, in its next NC, on the enforcement and administrative procedures in place to meet its commitments under the Kyoto Protocol, including the legal authority for such programmes, how they are implemented and procedures for addressing cases of non-compliance under domestic law.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the reporting guidelines for supplementary information. The reporting on the requirements not included in this table is considered to be complete and transparent.

2. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

(a) Technical assessment of the reported information

29. France provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention and its Kyoto Protocol. France reported on its policy context and legal and institutional arrangements put in place to implement its commitments and monitor and evaluate the effectiveness of its PaMs.

30. France provided information on a set of PaMs similar to those previously reported. France also provided information on changes made since the previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress

made towards its target. The National Low Carbon Strategy (see paras. 24–26 above) was adopted by decree on 18 November 2015. Regular monitoring of its implementation has been put in place by the Department for Combating Greenhouse Gas Emissions, to report to the stakeholders involved in its development and to feed the process of reviewing the strategy every 5 years. A group of 150 indicators has been defined, showing which PaMs in the strategy are denoted, monitored and run. The National Low Carbon Strategy review process was initiated in 2017 for publication at the end of 2018.

31. France gave priority to implementing the PaMs that make the most significant contribution to its emission reduction efforts. France reported on how it periodically updates its PaMs to reduce greater levels of emissions.

32. A significant share of the PaMs are deferred to the local level. Local authorities act alongside the national government as public contracting authorities: they steer regional and urban transport as well as organize and support the renovation of buildings within their own jurisdictions. Climate action from local authorities is structured around territorial planning instruments such as the SRADDET schemes, which serve as a programme for planning, mobility, energy and the fight against climate change to be developed by the regions in cooperation with the local authorities by mid-2019.

33. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package.

34. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities) that produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013).

35. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and includes binding annual targets for each member State for 2013–2020.

36. France highlighted the EU-wide mitigation actions and targets by 2030, which are under development, for emission reduction, renewable energy and energy efficiency along with the governance for climate and energy action, including integrated reporting. The implementation of these targets is critical for France's contribution to attaining the EU-wide 2030 emission reduction target of 40 per cent compared with the 1990 level.

37. France introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are energy savings certificates, the heat fund, incentives for energy upgrades in existing buildings and the carbon component in energy taxation. The mitigation effect of energy savings certificates is the most significant. Table 8 provides a summary of the reported information on the PaMs of France.

38. In July 2017 France published a new Climate Plan to accelerate the energy and climate transition and the implementation of the Paris Agreement. This plan sets priorities with the aims of achieving carbon neutrality towards the middle of the century, the elimination of thermally inefficient buildings within 10 years, discontinuing the sale of vehicles emitting GHGs by 2040, shutting down the last coal-fired power stations by 2022, gradually phasing out hydrocarbon production in France by 2040, a faster increase in the price of carbon and redoubling of efforts for publicly funded energy transition research.

Table 8
Summary of information on policies and measures reported by France

Sector	*Key PoMs*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*	*Estimate of mitigation impact by 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	Carbon component in energy taxation	6 140	9 100
Energy			
Transport	European and French regulations for passenger cars: energy/CO_2 label of new cars for sale; "Bonus-malus" scheme for car purchases and EU regulations on CO_2 from new passenger cars	2 412	5 409
Renewable energy	Heat fund	6 361	7 634
Energy efficiency	Incentives for energy upgrades in existing buildings: zero-interest eco-loan and energy transition tax credit	7 200	7 100
	Thermal regulation 2012	3 624	9 001
	Energy savings certificates	16 303	18 290
IPPU	European F-Gas Regulation II	653	5 404
	EU ETS	NE	NE
Agriculture	Farm Competitiveness and Adaptation Plan; Biogas energy for Nitrogen Autonomy Plan and feed-in tariff for electricity produced by small and medium-sized biogas installations	1 384	3 084
Waste	Waste sorting requirements	1 800	4 000

Note: The estimates of mitigation impact are estimates of emissions of CO_2 or CO_2 eq avoided in a given year as a result of the implementation of mitigation actions.

39. As part of France's reporting obligation under the EU, France submits to the European Commission, every two years, information regarding measures to reduce GHG emissions, including all hypotheses, calculation methods and evaluation results in terms of GHG emission reductions and costs.[3]

(b) Policies and measures in the energy sector

40. **Energy supply**. The reduction of CO_2 emissions from the energy production sector involves the capping of emissions from electricity and heating production facilities and refineries via the EU ETS and through supporting renewable energy.

41. **Renewable energy sources**. The Energy Transition for Green Growth Act of August 2015 sets the following objectives in terms of renewable energy development: increasing the share of renewable energy to 23 per cent of final gross energy consumption by 2020 and to 32 per cent by 2030; and achieving, in 2030, 40 per cent of electricity production, 38 per cent of final heating consumption and 10 per cent of gas consumption from renewable sources. To achieve these objectives France has introduced a planning instrument, the multi-annual plan, which sets quantitative targets for each renewable source over a period of 10 years.

42. France uses two mechanisms to achieve its targets: (1) the open access mechanism, which depends on the size of the facility, and is a purchasing obligation at a feed-in tariff exceeding the average market price for small facilities, and for high-capacity installations is a bonus paid as a supplement to the market sale of the electricity it has generated; and (2)

[3] France 2017 report in accordance with article 13.1 of regulation No. 525/2013.

tendering procedures, where financial support is allocated on conclusion of a tendering procedure. These procedures are suitable for renewable energy sectors that need supervision owing to the risk of usage conflicts or lack of suitable areas or technological demonstration.

43. **Energy efficiency**. The energy savings certificate scheme has been in operation since 2006 and is based on an obligation to achieve energy savings imposed by the public authorities on energy vendors. A multi-year target is established and allocated to the obligated parties according to their sales volumes. To meet their obligations they need to hold a number of energy savings certificates equivalent to these obligations. Certificates are obtained by carrying out energy saving actions or encouraging consumers to reduce energy consumption. The fourth obligation period is planned from 2018 to 2020 with a target set at 1,600 TWh cumac.[4]

44. The heat fund provides support to projects for producing heat from renewable energy. The heat fund makes renewable heat competitive by guaranteeing a price from renewable sources approximately 5 per cent lower than from conventional sources. The fund has funded 3,900 projects which produce around 2 Mtoe each year.

45. **Residential and commercial sectors**. The objectives of the measures in this sector are to improve the thermal performance of buildings, to encourage the use of high-performance heating equipment and lowest-carbon energy sources and to improve the efficiency of other types of equipment such as lighting and domestic hot water. The Thermal Regulation 2012 sets an overall energy performance target for new and renovated buildings. At the end of 2016 a trial phase was launched for the Positive Energy Buildings and Carbon Reduction (E+C–) certification label for the construction of exemplary buildings. This trial phase will pave the way for future environmental regulations for new buildings. The label brings together requirements for both energy use and GHG emissions in new buildings.

46. Financial aid is available for private individuals and social landlords to foster energy-related renovation of buildings. For example, the energy transition tax credit makes it possible to save 30 per cent on personal income tax for expenditure on certain performance improvement works, and the zero-interest eco-loan enables recipients to benefit from a zero-interest loan of up to EUR 30,000 to finance a range of energy renovation projects.

47. **Transport sector**. The measures in this sector are aimed at improving the energy efficiency of new road transport vehicles, encouraging the development of low-emission vehicles, promoting the development of biofuels and supporting modal shift. The "bonus-malus" scheme in place since 2008 aims to reward buyers of new low-emission cars and to penalize those who choose the most polluting vehicles. Since 1 January 2017 the penalty is applied to vehicles with emissions greater than 185 g CO_2/km, and leads to an increase in the purchasing price from EUR 50 to EUR 10,000. At the European level, Regulations (EC) No. 443/2009 and No. 333/2014 set a target 95 g CO_2/km in 2020, sending a signal to the industry for subsequent production cycles.

48. France reported information on the French PaMs in relation to the International Civil Aviation Organization and the International Maritime Organization to demonstrate the effort in supporting the global mechanism to reduce emissions. This activity is performed by France as part of its commitment as an EU member State. The EU has had integrated air transport activities in the EU ETS since 2012 and has introduced a monitoring, reporting and verification system for CO_2 emissions from shipping. As of 1 January 2018, maritime companies have to monitor and report, on an annual basis, emissions from their ships for all intra-EU journeys and all journeys to and from the EU, as well as CO_2 emissions in EU ports.

49. **Industrial sector**. The EU ETS is one of the main tools to reduce GHG emissions from industry (specific measures on F-gases are presented in paragraph 50 below). In addition, several incentive schemes to improve energy efficiency have been established, such as the Green Loan to put in place industrial manufacturing processes that are more energy-efficient.

[4] Final energy saved, cumulated and updated over the life of the product.

(c) Policies and measures in other sectors

50. **Industrial processes**. EU regulation 517/2014 on F-gases came into effect on 1 January 2015. It establishes provisions to limit emissions of F-gases from refrigeration and air-conditioning equipment used in buildings, industry and refrigerated transport. Further, France is fostering the transition to less-polluting refrigerants through financial/technical support programmes, public building regulations and communication campaigns; for example, in May 2017 6,000 leaflets were sent to users to inform them about the benefits of moving towards natural refrigerants.

51. **Agriculture**. Emissions in this sector are from agricultural soils, from enteric fermentation, energy consumption and animal manure. The Farm Competitiveness and Adaptation Plan offers financial support for the acquisition of CH_4 digesters, to promote slurry pit covers and effluent management, to reduce the use of mineral fertilizers and to develop leguminous crops. It also provides subsidies to reduce energy consumption and to develop renewable energy sources.

52. **LULUCF**. In comparison with other sectors the LULUCF sector is a net carbon sink. The main objective of the PaMs in this sector is to reduce CO_2 emissions or to contribute to carbon storage through CO_2 absorption. The Common Agricultural Policy focuses on measures encouraging carbon storage in soils and in biomass, including schemes to maintain grasslands. Further, France is implementing measures to develop timber as a material, particularly in the building industry, and for the development of biomass energy.

53. **Waste management**. Preventing waste production is set as a waste management priority for France. Several PaMs have been introduced in this regard: single-use plastic bags have been banned since 1 January 2016; food donation of unsold products is mandatory; and planned obsolescence is an offence. Regarding waste sorting, since 1 July 2016 there has been an obligation to sort waste produced by economic activities.

(d) Minimization of adverse impacts in accordance with Article 2 and Article 3, paragraph 14, of the Kyoto Protocol

54. In the NC7 France reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties. France provided information on how it strives to minimize the adverse effects on developing countries of the implemented PaMs (Article 2, paragraph 3, of the Kyoto Protocol). This activity is conducted under the EU framework and regulations. In this regard, France explained that the EU has introduced a system to estimate the positive and negative impacts, including the effects on other countries by way of impact studies, which are taken by France as a key element in the final decision when formulating PaMs and ensuring that the negative impacts of the EU policies on developing countries are minimized.

55. The ERT took note of additional information provided by France during the review, and noted that a summary of the EU system to estimate the impacts would enhance the transparency of the information reported in the NC7, in particular, how direct and indirect effects were quantified (e.g. how actions taken for "Developing biofuels" could contribute to "decreasing demand on fossil energies and potentially reduce price sensitivity"). France acknowledged the comments made by the ERT and stated that it will enhance the description of the EU impact estimation system in its next NC.

56. Further information on how France strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the 2017 annual submission. France reported on the assessment of economic and social consequences of response measures; adverse effects of climate change; the minimization of effects on international trade; and social, environmental and economic impacts on other Parties. The reporting included information on cooperation on the development of technologies and conducting relevant research. France provided detailed information in its NIR on the minimization of adverse effects on developing countries of the implemented PaMs, including

the reinforcement of capacity for adaptation to climate change and the integration of climate change issues in national policies, financial resource allocations and technology transfer. The ERT took note of the additional information provided during the review in the form of an organization diagram on the interministerial and inter-agency coordination to support France's actions in implementing the commitments under Article 3, paragraph 14, of the Kyoto Protocol.

(e) Assessment of adherence to the reporting guidelines

57. The ERT assessed the information reported in the NC7 of France and identified issues relating to completeness and transparency. The findings are described in table 9.

Table 9
Findings on policies and measures, including those in accordance with Article 2 of the Kyoto Protocol from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 23 Issue type: transparency Assessment: encouragement	The ERT noted that a quantitative estimate of the impacts of some individual PaMs was not reported in the NC7. During the review, France explained that it only estimated the impact of the main PaMs. However, the ERT noted that the Party presented policies such as the introduction of biofuel and the capture of biogas from landfills as main policies in their respective sectors but the impact of these measures has not been included in the NC7. The ERT reiterates its encouragement that France estimate the impacts of individual PaMs, or if that is not possible explain in the next NC the reasons for not being able to estimate these impacts.
2	Reporting requirement[a] specified in paragraph 24 Issue type: completeness Assessment: encouragement	The ERT noted that information about non-GHG mitigation benefits of PaMs has not been reported in the NC7. During the review, France presented *France's report – Pursuant to Article 13.1 of the regulation No. 525/2013 on a mechanism for monitoring and reporting greenhouse gas emissions – 2017 Update*, containing such information for the main PaMs. The ERT encourages France to report in its next NC information about the non-GHG mitigation benefits of PaMs or to provide a clear reference to a document detailing this information.
3	Reporting requirement[a] specified in paragraph 25 Issue type: transparency Assessment: recommendation	The NC7 did not include information on how the Party believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals. The ERT further noted that France provided in the NC7 information on its National Low Carbon Strategy, in particular the carbon budgets that will impact the longer-term trends in GHG emissions. During the review, France explained that financing for research and development is likely to exert the greatest impact on long-term trends. This information was provided in the chapter on long-term effects of the PaMs undertaken. The ERT reiterates the recommendation made in the previous review report that France report in its next NC how it believes its PaMs are modifying longer-term trends in GHG emissions noting that PaMs which may modify longer-term trends include, for example, PaMs which alter transport infrastructure or renovation measures in the building sector.

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

[a] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs.

C. Projections and the total effect of policies and measures, including information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

1. Projections overview, methodology and results

(a) Technical assessment of the reported information

58. France reported updated projections for 2020 and 2030 relative to actual inventory data for 2015 under the WEM scenario. The WEM scenario reported by France includes implemented and adopted PaMs until 1 July 2016. France did not report a WAM or WOM scenario.

59. In its NC7, France reports detailed information on projections for the geographical scope of the Kyoto Protocol (i.e. without overseas territories). Projection results under the Convention are briefly summarized in the text and additional results are provided in an annex. During the review, France explained that projections for the geographical scope of the Kyoto Protocol are reported for reasons of consistency with the chapter on PaMs, but that more detailed information under the Convention is available. The ERT notes that transparency could be improved if France presents projection results primarily for the scope of the Convention, or clearly explains why the focus of the results is on the geographical scope under the Kyoto Protocol.

60. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO_2, CH_4, N_2O, PFCs, HFCs and SF_6 (treating PFCs and HFCs collectively in each case) as well as NF_3 for 1990–2035. The projections are also provided in an aggregated format for each sector as well as for a Party total using global warming potential values from the IPCC Fourth Assessment Report.

61. France did not report emission projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds or sulfur oxides.

62. Emission projections related to fuel sold to ships and aircraft engaged in international transport were reported separately and were not included in the totals. France reported on factors and activities affecting emissions for each sector.

(b) Methodology, assumptions and changes since the previous submission

63. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the BR2. France reported supporting information further explaining the methodologies and the changes made since the BR2. Specifically, various scenario assumptions have been updated, but there have been no significant modifications to the models and methodologies.

64. To prepare its projections, France relied on the following key underlying assumptions: population, GDP, international fuel import prices, international natural gas import prices, international coal prices and the EU ETS carbon price. These variables and assumptions were reported in CTF table 5. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections.

65. France provided information on the changes, since the submission of its BR2, to the assumptions, methodologies, models and approaches used and on the key variables and assumptions used in the preparation of the projection scenarios. France also provided information on sensitivity analyses.

66. Sensitivity analyses were conducted for a number of important assumptions, such as energy prices and economic development indicators. Results of these sensitivity analyses were provided. The resulting changes in emissions amounted to 4 per cent of projected GHG emissions in 2030.

(c) Results of projections

67. The projected emission levels under different scenarios and information on the Kyoto Protocol targets and the quantified economy-wide emission reduction target are presented in table 10 and the figure below.

Table 10
Summary of greenhouse gas emission projections for France

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Kyoto Protocol base year[b]	548 055.76	NA	NA
Quantified emission limitation or reduction commitment under the Kyoto Protocol (2013–2020)[c]	NA	NA	NA
Quantified economy-wide emission reduction target under the Convention[d]	NA	NA	NA
Inventory data 1990[e]	550 068.50	NA	NA
Inventory data 2015[e]	463 650.09	NA	–15.7
WEM projections for 2020[f]	434 280.61	NA	–21.1
WEM projections for 2030[f]	403 467.89	NA	–26.7

[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol, while for the target under the Convention it refers to the base year used for that target.

[b] The Kyoto Protocol base-year level of emissions is provided in the initial review report, contained in document FCCC/IRR/2016/FRA.

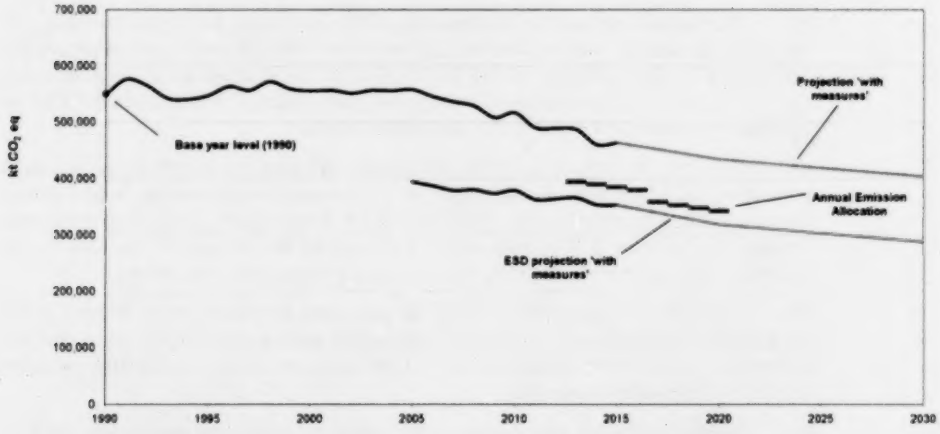
[c] The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target of the EU and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. The target for non-ETS sectors is 14.0 per cent for France under the ESD.

[d] The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020.

[e] From France's 2017 GHG inventory submission, version 3.

[f] From France's NC7 and/or BR3.

Greenhouse gas emission projections reported by France



Sources: (1) data for the years 1990–2015: France's 2017 annual inventory submission, version 3; total GHG emissions excluding LULUCF; (2) data for the years 2016–2030: France's NC7 and BR3; total GHG emissions excluding LULUCF; (3) data for the years 2016–2030: projected GHG emissions for ESD sectors: provided by the Party during the review.

68. France's target for non-ETS sectors is to reduce its total emissions by 14.0 per cent below the 2005 level by 2020. France's AEAs, which correspond to its national emission target for non-ETS sectors, change from 384,432.81 kt CO_2 eq in 2015 to 342,475.08 kt CO_2 eq for 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 318,531.00 kt CO_2 eq by 2020. The projected level of emissions under the WEM scenario is 7.0 per cent below the AEAs for 2020. The ERT noted that this suggests that France expects to meet its target under the WEM scenario.

69. France presented the WEM scenario by sector for 2020 and 2030, as summarized in table 11.

Table 11
Summary of greenhouse gas emission projections for France presented by sector

	GHG emissions and removals (kt CO_2 eq)			*Change (%)*	
	1990	*2020*	*2030*	*1990–2020*	*1990–2030*
Sector		*WEM*	*WEM*	*WEM*	*WEM*
Energy (including transport)	382 526.48	300 141.00	282 933.00	–21.5	–26.00
Transport	IE	IE	IE	NA	NA
Industry/industrial processes	67 034.36	43 345.00	34 679.00	–35.3	–48.3
Agriculture	83 528.65	75 577.00	73 498.00	–9.5	–12.0
LULUCF	–26 479.12	–51 889.00	–55 683.00	96.0	110.3
Waste	16 979.01	15 217.00	12 358.00	–10.4	–27.2
Total GHG emissions without LULUCF	**550 068.50**	**434 280.00**	**403 468.00**	**–21.1**	**–26.7**

Sources: GHG emission data: France's 2017 annual inventory submission, version 3; France's BR3 CTF table 6.

70. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy and industry/industrial processes sectors, amounting to projected reductions of 82,385.48 kt CO_2 eq (21.5 per cent) and 23,689.36 kt CO_2 eq (35.3 per cent) between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains the same.

71. France presented the WEM scenario by gas for 2020 and 2030, as summarized in table 12.

Table 12
Summary of greenhouse gas emission projections for France presented by gas

	GHG emissions and removals (kt CO_2 eq)			*Change (%)*	
	1990	*2020*	*2030*	*1990–2020*	*1990–2030*
Gas		*WEM*	*WEM*	*WEM*	*WEM*
CO_2	401 973.82	321 359.18	305 249.01	–20.1	–24.1
CH_4	70 059.49	56 078.51	53 009.54	–20.0	–24.3
N_2O	66 192.27	39 751.6	37 693.73	–39.9	–43.1
HFCs	4 402.20	16 147.55	6 643.29	266.8	50.9
PFCs	5 202.47	498.66	422.58	–90.4	–91.9
SF_6	2 221.77	434.48	439.11	–80.4	–80.2
NF_3	16.48	10.63	10.63	–35.5	–35.5
Total GHG emissions without LULUCF	**550 068.50**	**434 280.00**	**403 468.00**	**–21.1**	**–26.7**

Sources: GHG emission data: France's 2017 annual inventory submission, version 3; France's BR3 CTF table 6.

72. For 2020 the most significant reductions are projected for CO_2 emissions: 80,614.64 kt CO_2 eq (20.0 per cent) between 1990 and 2020. Likewise, the most significant reductions for 2030 are projected for CO_2 emissions: 96,724.81 kt CO_2 eq (24.1 per cent) between 1990 and 2030.

(d) Assessment of adherence to the reporting guidelines

73. The ERT assessed the information reported in the NC7 of France and identified issues relating to completeness and transparency. The findings are described in table 13.

Table 13
Findings on greenhouse gas emission projections reported in the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 28	The NC7 does not include all of the information on projections encouraged by the UNFCCC reporting guidelines on NCs. Specifically, France does not report projections for the WAM and WOM scenarios.
	Issue type: completeness	During the review, France indicated that the National Low Carbon Strategy is currently being revised and that France is planning to report projections including the WAM scenario from that revised strategy in the next submission.
	Assessment: encouragement	The ERT encourages the Party to include a WAM scenario in its next submission and to include a WOM scenario if such a scenario is available.
2	Reporting requirement[a] specified in paragraph 35	France does not report projections for indirect GHGs or for sulfur oxides.
	Issue: completeness	During the review, France informed the ERT that such projections have been carried out and reported under the United Nations Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution.
	Assessment: encouragement	The ERT encourages the Party to provide a reference to these projections in its next NC.
3	Reporting requirement[a] specified in paragraph 43	In its NC7, France did not provide information on strengths or weaknesses of the model or approach used for the projections, or on how the approach accounts for any overlap or synergies that may exist between different PaMs.
	Issue: completeness	During the review, France provided information on several models used, including Medpro (energy consumption model) and the refrigerant inventory and emission model for transport and for the residential sector. France explained it uses sectoral models to take into account the synergies between the PaMs of the same sector and thus to avoid major overlaps. The links between different sectors is more difficult and is addressed by defining consistent hypotheses for the different sectors to avoid the overlaps.
	Assessment: encouragement	The ERT encourages the Party to provide, in its next NC, brief information on strengths and weaknesses of the model or approach and on how the approach accounts for any overlap or synergies, similar to the information provided during the review.
4	Reporting requirement[a] specified in paragraph 44	In its NC7, France did not provide references for the models used, in order to explain the gases/sectors for which they were used.
	Issue type: completeness	During the review, France provided references for the various models used (see issue 3 above).
	Assessment: encouragement	The ERT encourages the Party to provide, in its next NC, key references for the models used in the projections.
5	Reporting requirement[a] specified in paragraph 45	In its NC7, France provided information on the models used, but did not provide specific information on the main differences in the assumptions, methods employed and results between projections in the current NC and those in earlier NCs.

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
	Issue type: completeness Assessment: encouragement	France provided such information during the review. Regarding assumptions, the main differences are an increase in the carbon tax, extension of the energy saving certificates scheme to 2020 and inclusion of EU regulation 517/2014 on F-gases. Regarding methods, the main difference is that sectoral models have been improved and recalibrated. Regarding the main difference in the results, a decrease in the energy consumption, agriculture and waste sectors has been observed. The ERT encourages the Party to provide, in its next NC, brief information on the main differences in the assumptions, methods employed and results between projections in the current NC and those in earlier NCs, similar to the information provided during the review.

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

[a] Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs.

2. Assessment of the total effect of policies and measures

(a) Technical assessment of the reported information

74. In the NC7 France presented the estimated and expected total effect of selected implemented and adopted PaMs (i.e. the total effect of those main PaMs for which the effects were estimated and presented in the 'Policies and Measures' chapter). Information is presented in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), in 2020 and 2030.

75. France reported that the total estimated effect of these selected PaMs is 50,000.00 kt CO_2 eq in 2020. According to the information reported in the NC7, PaMs implemented in the energy sector (without transport) will deliver the largest emission reductions, followed by PaMs implemented in the transport and waste sectors. Table 14 provides an overview of the total effect of PaMs as reported by France.

Table 14
Projected effects of France's planned, implemented and adopted policies and measures by 2020 and 2030

	2020	*2030*
Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Effect of implemented and adopted measures (kt CO_2 eq)*
Energy (without transport)	40 200	53 400
Transport	4 500	10 400
Industrial processes	1 600	8 200
Agriculture	1 400	3 100
Land-use change and forestry	–	–
Waste management	1 800	4 000
Total (rounded values, as given in the NC7)	**50 000**	**79 100**

Source: France's NC7.

Note: The total effect of implemented and adopted PaMs was estimated by adding the effects of selected main measures.

(b) Assessment of adherence to the reporting guidelines

76. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on

NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

3. Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

(a) Technical assessment of the reported information

77. In the NC7 France provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. The ERT noted that France does not plan to use the market-based mechanisms to meet its Kyoto Protocol target, and concludes that domestic actions account for the overall effort made to meet France's commitments under the Kyoto Protocol.

(b) Assessment of adherence to the reporting guidelines

78. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

D. Provision of financial and technological support to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol

1. Financial resources, including under Article 11 of the Kyoto Protocol

(a) Technical assessment of the reported information

79. France reported information on the provision of financial support required under the Convention and its Kyoto Protocol, including on financial support provided, committed and pledged, allocation channels and annual contributions.

80. France described how its resources address the adaptation and mitigation needs of non-Annex I Parties. It also described how those resources assist non-Annex I Parties to mitigate and adapt to the adverse effects of climate change, facilitate economic and social response measures, and contribute to technology development and transfer and capacity-building related to mitigation and adaptation. France reported information on the assistance that it has provided to developing country Parties that are particularly vulnerable to the adverse effects of climate change to help them to meet the costs of adaptation to those adverse effects. During the review, France gave more details on these points, stressing that it is building with the recipient countries long-term low-carbon or resilience strategies, with a strong focus on adaptation where technical assistance/capacity-building is also needed, particularly in the most vulnerable countries. France also develops direct cooperation with financial institutions in countries (public and private), in order to help financial institutions to transform and reorient financial flows. Additionally, in 2015 France contributed USD 5,546,609 to the Adaptation Fund.

81. France reported on its climate-specific public financial support, totalling USD 3.217 billion in 2015 and USD 3.693 billion in 2016, which represented an increase of 14.8 per cent of committed contributions. With regard to the most recent financial contributions aimed at enhancing the implementation of the Convention by developing countries, France reported in its BR3/NC7 that its climate finance has been allocated on the basis of priority areas, such as Africa, as affirmed by the Interministerial Committee for International Cooperation and Development. In January 2015, AFD funded an initial facility in order to assist 26 developing countries, including African countries and small island developing States, to prepare their intended nationally determined contributions. After the Paris Agreement, AFD decided to set up a new "AdaptaCtion" facility aimed at preparing the implementation of commitments made by countries in their nationally determined contributions. Table 15 includes some of the information reported by France on its provision of financial support.

Table 15
Summary of information on provision of financial support by France in 2015–2016
(Millions of United States dollars)

Allocation channel of public financial support	*Year of disbursement*			
	2013	*2014*	*2015*	*2016*
Official development assistance[a]	12 654.07	14 920.98	12 978.23	12 370.60
Climate-specific contributions through multilateral channels, including:	14.44	14.43	140.87	105.13
Global Environment Facility	14.44	14.43	19.95	19.95
Least Developed Countries Fund			0	16.59
Adaptation Fund			5.55	0
Green Climate Fund			115.37	68.58
Financial institutions, including regional development banks:			114.83	113.95
African Development Fund			36.31	113.95
Asian Development Bank Special Funds			4.29	30.1o
Inter-American Development Bank Special Fund			0.15	4.28
International Fund for Agricultural Development			9.04	0.84
International Development Association			65.03	69.50
Climate-specific contributions through bilateral, regional and other channels	2 968.63	3 657.05	2 961.45	3 473.95

[a] *Sources*: (1) Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/; (2) BR3 and NC7 submission.

(b) Assessment of adherence to the reporting guidelines

82. The ERT assessed the information reported in the NC7 of France and identified an issue relating to completeness. The finding is described in table 16.

Table 16
Findings on financial resources, including under Article 11 of the Kyoto Protocol from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 51	The ERT noted that France did not provide in the NC7 information required by the UNFCCC reporting guidelines on NCs regarding what financial support it considers to be "new and additional", although this information had been provided during the previous review.
	Issue type: completeness	During the review, France acknowledged this issue, noting that the required information was provided only in the BR3.
	Assessment: recommendation	The ERT reiterates the recommendation made in the previous review report that France provide in it next NC this definition in order to clarify how the Party has determined such resources as being "new and additional".

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

[a] Paragraph numbers listed under reporting requirement refer to the relevant paragraphs of the UNFCCC reporting guidelines on NCs.

2. Technology development and transfer, including information under Article 10 of the Kyoto Protocol

(a) Technical assessment of the reported information

83. France provided information on steps, measures and activities related to technology transfer, access and deployment benefiting developing countries, including information on activities undertaken by the public and private sectors. France provided examples of support provided for the deployment and enhancement of the endogenous capacities and technologies of non-Annex I Parties. Technology development and support is focused on renewable technology related projects, in all regions of the world particularly in Africa. An example of these are the African Renewable Energy Initiative, with a goal to reach at least 10GW of new and additional energy production capacity from renewable energy sources by 2020, and the International Solar Alliance, which aggregates requests for funding in order to reduce the cost of solar energy.

84. France provided information on steps taken to promote, facilitate and finance the transfer of technology to developing countries and to build their capacity in order to facilitate implementation of Article 10 of the Kyoto Protocol.

(b) Assessment of adherence to the reporting guidelines

85. The ERT assessed the information reported in the NC7 of France and identified issues relating to completeness. The findings are described in table 17.

Table 17
Findings on technology development and transfer, including information under Article 10 of the Kyoto Protocol from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement[a] specified in paragraph 55 Issue type: completeness Assessment: recommendation	The ERT noted that France did not report on success and failure stories related to technology transfer. During the review, France provided some examples of success stories, although these did not provide information on the factors which led to a project's success, which is essential information. Moreover, during the review France provided some reasons why some projects have failed, namely unsuitable technology regarding local conditions (e.g. temperature or humidity), lack of capacities or deficiency of the operator, a wrong business model or a change of political context. France stressed that those failures are taken as experiences to improve future actions. The ERT reiterates the recommendation made in the previous review report that France include in its next NC more complete and exemplary information on success and failure stories in the form provided in the UNFCCC reporting guidelines on NCs, table 6.
2	Reporting requirement[a] specified in paragraph 55 Issue type: completeness Assessment: recommendation	The ERT noted that France reported activities related to technology development and transfer support in a tabular format; however, it did not report activities for financing access by developing countries to "hard" or "soft" environmentally sound technologies. During the review, France stated that it does not have this type of classification. The ERT recommends that France report in the next NC its activities for financing access by developing countries to "hard" or "soft" environmentally sound technologies, noting that "soft" activities could be capacity-building, information networks, training and research, and "hard" activities could be those linked to providing equipment to control, reduce or prevent anthropogenic emissions of GHGs in the energy, transport, forestry, agriculture and industry sectors, to enhance removals by sinks, and to facilitate adaptation.
3	Reporting requirement[a] specified in paragraph 56	The ERT noted that France did not report information, in textual format, on steps taken to support the development and enhancement of endogenous capacities and technologies of developing countries.

Issue type: completeness	During the review, France explained that enhancement of endogenous capacities and technologies is included in specific projects it supports. The example given was Typha Fuel Project Construction West Africa, initiated in 2017 to help Senegal and Mauritania develop endogenous techniques at the industrial level to valorize the invasive plant typha, which threatens the Senegal river, and to use it for the thermal insulation of buildings and the production of vegetal coal. Moreover, France stated that particular attention is paid to the adaptation of technologies and techniques to the local conditions and circumstances and to the involvement of local stakeholders.
Assessment: recommendation	The ERT recommends that France include in its next NC explicit information on how it supports the development and enhancement of endogenous capacities and technologies of developing countries.

Note: The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

[a] Paragraph numbers listed under reporting requirement refer to the relevant paragraphs of the UNFCCC reporting guidelines on NCs.

E. Vulnerability assessment, climate change impacts and adaptation measures

1. Technical assessment of the reported information

86. In the NC7 France provided the required information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation. France provided a description of climate change vulnerability and impacts on land-use planning, cities, water resources, public health, the protection of people and property, biodiversity and cultural heritage, modification of natural ecosystems because of their particular vulnerability (the coastline and sea, mountains and forests) and on the following economic activities: agriculture, energy, industry, transport, construction, housing and tourism. The ERT noted that since its NC6 France has covered other sectors and provided information in its NC7 on energy, transport, tourism and infrastructure, but there is still a lack of information for the livestock and fishery sectors.

87. France also highlighted the adaptation response actions taken and planned at different levels of government. ONERC was created by a law of 2001 and has an objective to collect and disseminate information and make recommendations on prevention and adaptation measures that can limit the risks associated with climate change. In 2010, a wide dialogue bringing together the associations of the Grenelle Environmental Forum (the State, elected representatives, civil society, employers and trade unions) was behind the development of the NAPCC. This first adaptation plan only addressed measures that applied to the national level. The specific territorialization of adaptation at the local level is addressed under the Regional Climate, Air and Energy Plans and Territorial Climate and Energy Plans. In June 2015, the General Council for the Environment and Sustainable Development evaluated the first NAPCC. The ERT noted that France did not provide information on the results of the final evaluation of its first NAPCC, as was suggested in the previous review report (IDR.6). The report that evaluated the first NAPCC contains a summary of the evaluation and recommendations for a future plan covering the period 2017–2021. The aim of the second NAPCC, to be implemented during the five-year term, will be to better protect French citizens against extreme climatic events, and also to build resilience to climate change in the main sectors of the economy (agriculture, industry and tourism). The ERT noted that no information has been provided about the second NAPCC in the NC7 and there is no description or prioritization of adaptation measures planned or implemented for the main selected sectors: agriculture, industry and tourism. During the review, France explained that before publishing this second NAPCC (a governmental document) an interministerial step is needed. The ERT suggests that France provide this information related to the second NAPCC in its next NC.

88. The ERT noted that impetus has been given to addressing adaptation matters with the adoption of the ONERC report published in 2009, "Climate change impacts, associated costs

and lines of adaptation", which provided further direction to government agencies on enhancing preparedness for climate change. The report shows that the annual costs linked to climate change could reach several billion euros per year for mainland France if no adaptation measures are taken. It has been established that by 2050–2100 France will be faced with an increased strain on water resources (e.g. 2 billion m^3 deficit per year), a marked change in natural risks (e.g. damage caused to homes by the shrinkage or swelling of clays that could exceed EUR 1 billion per year), marked impacts on biomass production (e.g. costs of more than EUR 300 million per year for the cultivation of wheat alone, should there be an increase in events comparable to the 2003 heat wave). France has also adopted a new territorial organization, as defined by Law No. 2015-991 of 7 August 2015, covering the objectives of SRADDET relating to the climate, air and energy that must include climate change mitigation and adaptation measures. SRADDET will be approved by 28 July 2019. Table 18 summarizes the information on vulnerability and adaptation to climate change presented in the NC7 of France.

Table 18
Summary of information on vulnerability and adaptation to climate change reported by France

Vulnerable area	*Examples comments adaptation measures reported*
Agriculture and food security	*Vulnerability:* crop yields will increase for areas at high latitudes (since the local temperature will increase by less than 3 °C and the higher CO_2 concentration will have a positive effect on photosynthetic activity). Crop yields at lower latitudes will decrease. Viral, bacterial and parasitical diseases will emerge. *Adaptation:* genetic research to enhance and conserve crop and fruit varieties is undertaken; long-term water management policies to improve the irrigation of small areas (capacity to store excess winter rainfall) are being assessed; crop pest and livestock disease warning system.
Biodiversity and natural ecosystems	*Vulnerability:* loss of biodiversity, reduced areas of coral ecosystems. An economic assessment of biodiversity losses based on the concept of ecosystem services, applied to coral ecosystems and non-goods services provided by forests, indicates a negative impact. *Adaptation:* new forecast models for modification of biodiversity in line with the climatic scenarios and the economic evaluation of ecosystem services have been developed; strengthening of cross-border collaboration is planned.
Coastal zones	*Vulnerability:* sea level will rise. *Adaptation:* rolling back the infrastructure inland is forecast; water evacuation systems, equipment for floodable areas, raising of foundations of buildings and reinforcing protection services are planned; sea level rise will be mainstreamed in coastal town and country planning documents.
Tourism	*Vulnerability:* snowfalls will dramatically decrease at low altitudes, and to a lesser extent at higher altitudes. The maximum depth of accumulated snow will decrease at all altitudes. This will shorten the skiing season and will have a negative impact on the tourism industry in mountain areas. *Adaptation:* implementation of a research programme to anticipate local snow cover depletion; promotion of alternative recreational activities for winter tourism in the mountain areas.
Forests	*Vulnerability:* forest productivity is projected to increase until 2050 (owing to a shorter cold period) and is projected to decrease in the long term (until 2100) (owing to more frequent extreme weather events and the spread of the Mediterranean forest). *Adaptation:* changes in forestry management by harvesting appropriate species and amounts; research and observation on species robustness/resistance, as well as genetic improvements, is ongoing; management of protected forest areas; development of standards for and promotion of wood use in construction.
Human health	*Vulnerability*: the risk of heatwaves will increase distinctly. A number of pathologies are likely to be noted; for example, more than 10 million people in France are affected by pollen allergies or hay fever. *Adaptation*: new climate-related risk factors monitored, such as pollen, fungi insects and vector-borne diseases, and toxin-producing microorganisms; solar ultraviolet radiation early warning system; heatwave management scheme; related health services will be upgraded.
Water resources	*Vulnerability*: by 2020, water collection is expected to decrease by 20.0 per cent; shortage of 2 billion m^3 of water for industry, agriculture and drinking is expected by 2050. Disturbances to the hydrological cycle could be accompanied, in some circumstances, by more frequent and more intense flooding. *Adaptation*: develop water-saving and ensure more efficient use of water; make 20 per cent savings in water abstracted, excluding winter water stocks, by 2020.

89. France provided a detailed description of international adaptation activities, including initiatives seeking adaptation measures across the scientific results linked to the AMMA programme (2002–2020) and the AMMA-CATCH networks. The AMMA is an international programme led by France (LOCEAN laboratory) studying the West-African monsoon, its variability and its links with social and economic issues. Its second phase began in 2010 and will end in 2020. France also participated in the Mediterranean Integrated Studies at Regional and Local Scales programme. France provided information on bilateral cooperation with developing countries on adaptation, such as its contribution to the development of the research capacities of southern partners with the help of the two national organizations IRD and CIRAD. The aim of IRD is to better understand the processes at the root of climate variability and improve predictive capabilities in tropical environments, so as to refine climate change scenarios at the ten-year and centennial timescales. CIRAD has defined six priority research themes: ecological intensification; energy biomass; food; animal health and emerging diseases; public policies; and rural areas. It is engaged in cooperation activities with more than 90 countries in Africa, the Indian Ocean, Asia and South America.

2. Assessment of adherence to the reporting guidelines

90. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

F. Research and systematic observation

1. Technical assessment of the reported information

91. France provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities, including contributions to the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System and the IPCC. France also provided information on the identification of opportunities for and barriers to free and open international exchange of data and information and on action taken to overcome such barriers.

92. France has implemented and planned international and domestic policies and programmes on climate change research, systematic observation and climate modelling that aim to advance capabilities to predict and observe the physical, chemical, biological and human components of the Earth's system over space and time. According to the Strategic Agenda for Research and Innovation France Europe 2020, the NSR defines the main French research priorities around 10 major challenges and six of them are directly linked to climate change: careful resource management and adaptation to climate change; clean, safe and efficient energy; stimulating industrial renewal; health and well-being; food security and demographic challenge; and sustainable transport and urban systems.

93. The 2015–2020 French NSR is organized and implemented through multi-annual contracts concluded with research organizations and higher education institutions, the French National Research Agency programming and other public research funding. The PIA provided an opportunity to support research and innovation in the field of environmental research and climate change and to structure the communities involved through various calls for proposals. The PIA has a budget of EUR 35 billion and engages 22 higher education and research centres. Since 2010, the PIA involved three programmes: the first in 2010, the second in 2013 and the third in 2016. The NFS and the Environment and Energy Management Agency are associates of the alliance which aims to coordinate French research to achieve a successful ecological transition and meet the major societal challenges. The ERT noted that France has many activities related to research at several levels (national, European and international) and providing a clear diagram will be helpful to illustrate the main organization of research at all levels and also to show the main information about the coordination between all entities involved in this process.

94. In terms of activities related to systematic observation, France reported on national plans, programmes and support for ground- and space-based climate observing systems,

including satellite and non-satellite climate observation. France also reported on challenges related to the maintenance of a consistent and comprehensive observation system. France has set up a national strategy for research infrastructures, leading to the publication of the first French road map in 2008, with updates in 2012 and 2016. The 2016 road map includes 95 research instruments and takes into account the new benefits of technology and the evolution of scientific practices, as well as the connection with European (the European Strategy Forum on Research Infrastructures road map for European infrastructure) and international networks, the human or financial investments, the repercussions for innovation and the reshaping of the French research landscape. France is participating in the development of the large Copernicus programme aimed at gathering all the data obtained from environmental satellites and on-site measuring instruments, in order to produce a global and complete view of the state of the planet. The country has prepared a "National Roadmap for the Arctic", which identifies, ranks and coordinates France's priorities with regard to the Arctic. Following two years of work, an interministerial document was adopted and presented in June 2016.

95. The NC7 reflects actions taken to support capacity-building and the establishment and maintenance of observation systems and related data and monitoring systems in developing countries. France provided funding for scientists from developing countries working on global climate change research. France has two national organizations, IRD and CIRAD, under the joint supervision of the Ministry responsible for Research and the Ministry of Foreign Affairs, which conduct research and development activities with and for the southern countries. The IRD aims to contribute to the development of the research capacities of the southern partners. Its research strategy is developed in more than 90 countries in the form of centres or temporary missions.

2. Assessment of adherence to the reporting guidelines

96. The ERT assessed the information reported in the NC7 of France and identified an issue relating to transparency. The finding is described in table 19.

Table 19
Findings on research and systematic observation from the review of the seventh national communication of France

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	In its NC7, for the section on "Research and systematic observation", France follow a structure that is not in line with the structure in the UNFCCC reporting guidelines on NCs. In the French NC7, the text is structured as "A. General vision of climate research and observation in France, B. Systematic Observation", whereas it should be "A. General policy on and funding of research and systematic observation, B. Research and C. Systematic observation" and this results in an issue of transparency. During the review, France explained how it structured the section, which included providing information on A and B in the UNFCCC reporting guidelines on NCs in section A of the NC7. The ERT recommends that, for the section on "Research and systematic observation", France follow the structure provided in the UNFCCC reporting guidelines on NCs.

Note: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

G. Education, training and public awareness

1. Technical assessment of the reported information

97. In the NC7 France provided information on its actions relating to education, training and public awareness at the domestic and international level. The Party provided information

on the general policy on education, training and public awareness, primary, secondary and higher education, public information campaigns, training programmes, education materials, resource or information centres, the involvement of public organizations and NGOs and its participation in international activities. The French population's awareness of climate change has continued to increase, in line with the levels observed in 2008 and 2013. According to opinion polls conducted in 2015 and 2016, 77 per cent of French people say they are personally worried about climate change. In 2013, France adopted Law No. 2013-595 on the "Orientation and Programming Act for the Reformation of the Schools of the French Republic". According to this law, environmental and sustainable development education became one of the missions of school education and a part of the national education code. This law allows reflection on climate change, resources, energy management and the preservation of biodiversity beside other themes.

98. France also intends to integrate education on sustainable development into all school and educational institution programmes by 2020. With the adoption of the Grenelle laws (in 2009 and 2010), France aims to organize an annual Environmental Conference in order to assess the progress of public action with regard to the environment, and to define a new work programme for sustainable development. Every year, these conferences bring together environmental dialogue partners (ministers, representatives of NGOs, trade unions, employers' organizations, local authorities and politicians). At the international level, and as a member of the "Open Government Partnership" since April 2014, the Party has also developed its first Action Plan, rolled out between 2015 and 2017, and gave a major place to sustainable development and the fight against climate change. This international initiative brings together 75 countries and hundreds of civil society organizations around the world for the transparency of public action.

2. Assessment of adherence to the reporting guidelines

99. The ERT assessed the information reported in the NC7 of France and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

III. Conclusions and recommendations

100. The ERT conducted a technical review of the information reported in the NC7 of France in accordance with the UNFCCC reporting guidelines on NCs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC7 provides an overview of the national climate policy of France.

101. The information provided in the NC7 includes most elements of the supplementary information under Article 7 of the Kyoto Protocol, with the exception of information on domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures and financial resources. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by France in its 2017 annual submission.

102. France's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 15.7 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 18.3 per cent below its 1990 level in 2015. Emission decreases were driven by factors such as the improvement of industrial processes, the increasingly service-based nature of the French economy and mitigation measures in the energy, agriculture and waste sectors.

103. France's main policy framework relating to energy and climate change is Energy Transition for Green Growth Act and its National Low Carbon Strategy. Further, the EU ETS is one of the main tools used to reduce GHG emissions from industry. The key policies reported by France are energy savings certificates, the heat fund, incentives for energy

upgrades in existing buildings and the carbon component in energy taxation. The mitigation effect of energy savings certificates is the most significant.

104. The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. In assessing the progress towards the achievement of the 2020 target, the ERT noted that France's emission reduction target for non-ETS sectors is 14.0 per cent below the 2005 level.

105. The GHG emission projections provided by France include those under the WEM scenario. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 318,531.00 kt CO_2 eq by 2020. The projected level of emissions under the WEM scenario is 7.0 per cent below the AEAs for 2020. The ERT noted that this suggests that France expects to meet its target under the WEM scenario.

106. The NC7 contains information on how the Party's use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action. France is not planning to make use of the Kyoto Protocol mechanisms to meet its Kyoto Protocol target.

107. France reported on its climate-specific public financial support, totalling USD 3.217 billion in 2015 and USD 3.693 billion in 2016, representing an increase of 14.8 per cent of committed contributions. During the reporting period, France placed a focus on African countries. Technology development and support is focused on renewable technology related projects in all regions of the world, particularly in Africa. An example of this is the African Renewable Energy Initiative and the International Solar Alliance.

108. France provided a description of climate change vulnerability and impacts on land-use planning, cities, water resources, public health, the protection of people and property, biodiversity and cultural heritage, modification of natural ecosystems because of their particular vulnerability (the coastline and sea, mountains and forests) and on the following economic activities: agriculture, energy, industry, transport, construction, housing and tourism. France also highlighted the adaptation response actions taken and planned at different levels of government. ONERC was created by a law of 2001 and has as an objective to collect and disseminate information and make recommendations on prevention and adaptation measures that can limit the risks associated with climate change.

109. France provided information on its general policy and funding relating to research and systematic observation and both domestic and international activities, including contributions to the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System and the IPCC. The NSR defines the main French research priorities around 10 major challenges, six of which are directly linked to climate change: careful resource management and adaptation to climate change; clean, safe and efficient energy; stimulating industrial renewal; health and well-being; food security and demographic challenge; and sustainable transport and urban systems.

110. The Party provided information on the general policy on education, training and public awareness, primary, secondary and higher education, public information campaigns, training programmes, education materials, resource or information centres, the involvement of public organizations and NGOs and its participation in international activities. The French population's awareness of climate change has continued to increase. In 2013, France adopted Law No. 2013-595 on the "Orientation and Programming Act for the Reformation of the Schools of the French Republic". According to this law, environmental and sustainable development education became one of the missions of school education and a part of the national education code.

111. In the course of the review, the ERT formulated the following recommendations for France to improve its adherence to the UNFCCC reporting guidelines on NCs and its reporting of supplementary information under the Kyoto Protocol:[5]

(a) To improve the completeness of its reporting by:

[5] The recommendations are given in full in the relevant sections of this report.

(i) Reporting GHG emission trends for the geographical scope of the Convention (see issue 1 in table 6);

(ii) Providing the time frames for the obligations established by the Kyoto Protocol, together with the relevant decisions of COP and CMP (see issue 1 in table 7);

(iii) Reporting on the enforcement and administrative procedures in place to meet its commitments under the Kyoto Protocol, including the legal authority for such programmes, how they are implemented, and procedures for addressing cases of non-compliance under domestic law (see issue 2 in table 7);

(iv) Providing the definition in order to clarify how the Party has determined the resources as being "new and additional" (see issue 1 in table 16);

(v) Providing more complete and exemplary information on success and failure stories related to technology transfer in the form provided in the UNFCCC reporting guidelines on NCs, table 6 (see issue 1 in table 17);

(vi) Reporting on its activities for financing access by developing countries to "hard" or "soft" environmentally sound technologies (see issue 2 in table 17);

(vii) Providing explicit information on how it supports the development and enhancement of endogenous capacities and technologies of developing countries (see issue 3 in table 17);

(b) To improve the transparency of its reporting by:

(i) Specifying how it believes its PaMs are modifying longer-term trends in GHG emissions (see issue 3 in table 9);

(ii) Following the structure provided in the UNFCCC reporting guidelines on NCs for the section "Research and systematic observation" (see issue 1 in table 19).

IV. Questions of implementation

112. During the review the ERT assessed the NC7, including the supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, and reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol with regard to timeliness, completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. No question of implementation was raised by the ERT during the review.

Annex

Documents and information used during the review

A. Reference documents

2017 GHG inventory submission of France Available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/submissions/national-inventory-submissions-2017.

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Report on the individual review of the annual submission of France submitted in 2017. FCCC/ARR/2017/FRA. Available at https://unfccc.int/node/65982.

Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of France. FCCC/IRR/2016/FRA. Available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-kyoto-protocol/second-commitment-period/initial-reports.

Report on the technical review of the sixth national communication of France. FCCC/IDR.6/FRA. Available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports--annex-i-parties/international-assessment-and-review/review-reports.

Revisions to the guidelines for review under Article 8 of the Kyoto Protocol. Annex I to decision 4/CMP.11. Available at http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf.

B. Additional information provided by the Party

Responses to questions during the review were received from Ms. Pascale Vizy, Ministry for Ecological and Inclusive Transition. The following document[1] was provided by France:

France's report – Pursuant to Article 13.1 of the regulation No. 525/2013 on a mechanism for monitoring and reporting greenhouse gas emissions – 2017 Update. Available at http://cdr.eionet.europa.eu/fr/eu/mmr/art04-13-14_lcds_pams_projections/pams/envwsc9fq/Report_2017_France_MMR_article_13_EN.pdf.

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